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STRENGTHENING OF INTERNATIONAL COOPERATION AND COORDINATION OF EFFORTS TO STUDY, MITIGATE AND MINIMIZE THE CONSEQUENCES OF THE CHERNOBYL DISASTER

Report of the Secretary-General

Addendum

Subsequent to the preparation of addendum 1 to the report of the Secretary-General on the strengthening of international cooperation and coordination of efforts to study, mitigate and minimize consequences of the Chernobyl accident, further pertinent information was received from the Government of Ukraine. The communication describes measures to eliminate the consequences of the Chernobyl disaster in Ukraine, and is contained in the following annex.

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ANNEX

Information provided by the Government of Ukraine

1. More than six years have elapsed since the tragic night of 26 April which brought the world the news of an event which bears the short, down-to-earth name "the Chernobyl disaster", but which has had extraordinarily complex consequences the effects of which will be with us far into the future.

2. The features of this disaster are becoming ever more clearly apparent. This necessitates the constant application of a whole series of complex measures to eliminate the consequences of the accident at the Chernobyl nuclear power plant. To this end, a special State programme for 1990-1992 has been drawn up, the main responsibility for the implementation of which rests with an organ especially established for the purpose - the Ministry for Protection of the Population from the Consequences of the Accident at the Chernobyl Nuclear Power Plant.

3. One of the priority tasks after the accident at the Chernobyl nuclear power plant was to investigate and assess the radiation status of the territory of Ukraine. For this purpose, an airborne gamma survey was conducted, followed by ground verification of the data obtained. The conduct of this work made it possible to define the boundaries of the radioactive contamination zones in line with the criteria established by the Ukrainian legislation on the Chernobyl problem.

4. For information purposes, maps were published of the radiation status of the territory of Ukraine, with accompanying recommendations for the population.

5. Every year, a detailed survey is conducted and boundaries and levels of radioactive pollution are precisely determined and the quality of food products is simultaneously assessed, the dose levels in residents of these regions are calculated, and measures are carried out to reduce them.

6. A large volume of work has been done on preventing radionuclides from the exclusion zone entering the series of reservoirs on the Dnepr. In 1992 an 11-kilometre dam was built on the Pripyat River, thus permitting a five- to sixfold reduction in caesium and strontium entering the Kiev reservoir.

7. The design of the Scheme of Water Protection Measures in the exclusion zone is nearing completion, and work is under way to develop and manufacture radiometric and dosimetric monitoring instruments for both professional and household use.

8. The state programme provides for a further refinement of the radiation status of the contaminated territories, in the first place in the guaranteed voluntary evacuation zone, and for a detailed picture to be obtained of the distribution of radionuclides in locations where the population is permanently

resident and employed, as well as for determination of the behaviour and migration of radionuclides, including those of the trans-uranium elements (plutonium and americium-241), in the environment. Planned expenditure on radiation monitoring amourts to 649.24 million roubles in 1993-1995 and 565.8 million roubles in 1996-2000.

9. As a result of the Chernobyl disaster, more than 12 per cent of the total area of agricultural land (4.6 million hectares) has been contaminated with caesium-137 to a level of from 0.1 to 15 or more curies/km^2. Seventy-four districts in 11 regions have been the hardest hit. This has led to a substantial reduction in the volume of agricultural production. As a result of the high level of contamination, 123,000 hectares of land have been left fallow. In 1989 the area under grain crops in Ukraine was 122,000 hectares less than in 1986, under potatoes 46,000 hectares less and under long-stalked flax 24,000 hectares less. The number of cattle has been reduced by 99,000 head, of pigs by 15,000 and of sheep by 124,000. Considerable damage has been inflicted on forestry. There are 2.8 million hectares of forest within the radiation contamination zone. Over 44 per cent of their area, the density of contamination with radiocaesium is more than 1 curie/km^2. Operations have been completely halted on 136,000 hectares of timber stands. As a result of the high level of contamination of individual areas, the forestry sector of the economy in the Zhitomir, Kiev, Rovno, Volyn and Chernigov regions has for the past five years suffered a shortfall of about 1 million cubic metres of timber and considerable quantities of forest-growing food products.

10. In order to prevent radionuclides entering food products, the agricultural industry has introduced a comprehensive range of agrochemical, meliorative and agrotechnical measures. Since 1986, the soil has been limed over an area of 423,000 hectares and increased levels of mineral fertilizer have been applied to an area of 725,000 hectares. Mineral fertilizers and chemical meliorative agents have been applied to 12,000 hectares of private agricultural plots.

11. In order to prevent the production and sale of articles exceeding the standards for radioactive contamination, a network of official dosimetric control posts has been established. Within the sites the Ministry of Agriculture of Ukraine maintains 750 laboratories and similar stations and the Ministry of Fishing 40.

12. However, in spite of the measures taken in Ukraine to reduce the level of radionuclides in food products, the problem will continue to exist for a long time in the agrarian and forestry sectors. The regulations adopted in the days of the former Soviet Union on the permissible level of radionuclides in food products (milk - 370 bq per litre, butter - 740 bq per kilogramme, basic vegetable products - 600 bq per kilogramme) do not meet international standards. The consumption of such products leads to internal irradiation and debilitation. The development of agricultural systems ensuring that such products approach international standards is one of the most important tasks to be accomplished in order to overcome the effects of the Chernobyl disaster. It requires significant expenditures of additional resources.

13. For example, in many areas of Ukraine milk is produced in the private sector in unsatisfactory conditions. In 1991-1992 tests were conducted in 2.6 thousand settlements, 86 districts and 11 regions of the country. In 229 settlements, the level of caesium-137 contamination of the milk was above 370 bq per kilogramme. In more than 1,000 settlements, the milk produced had a level of contamination above 37 bq per litre. In some villages of the Rovno region, the level of milk contamination reached 2,852-15,784 bq per litre.

14. In the forest districts of Polesya an important part of the diet of the population consists of forest products. As a result of the Chernobyl disaster, these showed a significant degree of radioactive contamination. Thus, in the Rakitnoy district of the Rovno region the level of caesium-137 contamination of fresh mushrooms was from 80 to 2,324 bq per kilogramme, of dried mushrooms from 3,600 to 4,000 bq per kilogramme, of berries from 700 to 2,500, of game 3,490 bq per kilogramme. Similar levels were found in the forest products of almost all the contaminated districts of Volyn, Zhitomir, Rovno, Kiev, Chernigov and other regions.

15. The nature and extent of the accident have raised, in an acute form, the question of protective measures. Unfortunately, however, they have not always been timely, comprehensive or effective.

16. Between 1986 and 1991 the following protective measures were taken:

- In the first two months after the accident, 92,600 persons were evacuated from the most contaminated areas. As of 1 January 1992, more than 163,000 persons had been resettled or had left voluntarily;

- In May 1986, more than 5 million persons, including 1.6 million children, received iodine prophylaxis;

- In order to keep contaminated waste from the reactor out of the Dnepr River, 131 hydroelectrical installations were constructed in the 30-kilometre zone;

- The site of, and many settlements surrounding, the Chernobyl nuclear power plant were deactivated;

- Measures were taken to improve the well-being of the population of the affected districts through the provision of environmentally sound foodstuffs;

- Measures were taken to restructure the agricultural production of the affected districts, and 131,000 hectares of agricultural land and 140,000 hectares of forest land were taken out of production;

- Five hundred and seventy artesian wells were dug and the road, water main and water supply systems were extended by hundreds of kilometres, etc.;

- The legal and social rights of the affected population were safeguarded.

17. At present, 18,200 families (about 60,000 persons) from the compulsory evacuation zone and 11,400 families from the voluntary evacuation zone must be resettled. As of 1 January 1992, according to the data of the Ministry of Statistics of Ukraine, 27,100 families had been evacuated and were receiving social assistance. Priority development of the social welfare sector is planned for the affected areas. Expenditures on capital investment in construction related to the elimination of the consequences of the accident at the Chernobyl nuclear power plant will amount to 23,463.75 million roubles in 1993-1995, and 8,919.08 million roubles in 1996-2000. Expenditures on capital investment for the infrastructural development of the districts suffering from radioactive contamination will amount to 14,099.71 million roubles in 1993-1995 and 16,597.9 million roubles in 1996-2000.

18. Currently more than 2 million people are living in rural areas within the territory contaminated as a result of the Chernobyl catastrophe. For these people, firewood and peat are the principal sources of energy for heating and other purposes.

19. A special project to supply natural gas on a priority basis has been set up in order to provide the rural districts affected with ecologically sound sources of energy. It is estimated that the project will take two to two and a half years to complete and will depend upon deliveries of the latest foreign equipment and high-productivity technology. For that purpose, expenditures in the order of US$ 23.5 million will be required.

20. A solution to the public health problem is an important aspect of the effort to eliminate the consequences of the accident. At the present time a radiation dosage pass system has been established for settlements within the contaminated areas. As a result of the Chernobyl accident, additional body burdens of over 5 mSv are being received by residents in 57 settlements in the Kiev, Zhitomir, Rovno, Chernigov and Volyn regions, of 1.0 to 5 mSv in 783 settlements, and of 0.05-1 mSv in 377 settlements. A portion of the afflicted population has been included in the national Register, which at present contains data for 347,619 people.

21. The Register database contains the results of over 150,000 direct measurements of thyroid irradiation doses, 40,000 irradiation dose measurements, 200,000 results of measurements of radioactive Caesium content, and 150,000 radioimmune studies. According to the results of the measurements, 14,000 children received thyroid irradiation doses of greater than 200 SG. An annual analysis of the data shows that among clean-up workers with records in the Register who had received radiation doses greater than 25 cSv, there was a notable trend towards increased numbers of oncological illnesses. According to data from clinics, 39.8 per cent of the first group surveyed, 29 per cent of a second group, 32 per cent of a third group and 40 per cent of a fourth group were healthy.

22. Since 1986, the number of new cases of thyroid cancer has risen two and one half times. The greatest number of new cases was noted in the period 1990-1991 among children in the Kiev, Zhitomir and Chernigov regions.

23. In order to provide a solution to problems relating to the improvement of the health of victims of the Chernobyl disaster, a special programme has been elaborated, for the practical implementation of which the Government is providing an allocation of approximately 3 billion roubles. However, one of the main obstacles to its implementation is the absence of the necessary diagnostic equipment and apparatus for the study of thyroid and other endocrine glands, blood and blood-producing organs, the immune system and genetic defects.

24. In this connection, Ukraine is counting on mutually advantageous international cooperation which would include the provision by the Ukrainian side of raw materials, personnel, production sites and financial resources, and by the international community of the relevant technology and equipment. In contrast to traditional assistance in the form of finished products, this type of cooperation could be significantly more effective.

25. There are good internal possibilities in Ukraine for the development of mutually advantageous cooperation in the area of pharmacology.

26. The Chernobyl disaster presented Ukraine with a multitude of complex problems. These included the problem of the 30-kilometre exclusion zone, in which there are approximately 800 storage tanks for radioactive waste. Their volume exceeds 1.2 million cubic metres and their total activity, according to estimates, amounts to 3.8 x 10 curies. They require attention and will have to be neutralized in the future.

27. There is also the problem of the "Ukrytie" site, the security of which is today reliably guaranteed for a period of not more than seven years. The total activity of the radioactive waste within the "Ukrytie" site exceeds 20 million curies. With a view to resolving the problem of the No. 4 reactor block of the Chernobyl nuclear power plant, the Government of Ukraine announced an international competition for a project for the transformation of the "Ukrytie" site into an environmentally safe system. The execution of the project requires the assistance of the international community, since its cost cannot be met from the budget of Ukraine alone.

28. One of the major measures aimed at resolving the problems of Chernobyl is the carrying out of the relevant scientific research work, which Ukraine has fully taken upon itself.

29. The programme of scientific safeguards for the coming years provides for the establishment of the material base and a professional training institute in Ukraine, the existence of which would make it possible for Ukraine to resolve independently problems relating to the biological effects of small doses of radiation, the search for new means, preventive measures, the diagnosis and cure of radiation sickness, radiation monitoring and agriculture and forestry in the contaminated areas, and the solution of the social, environmental, legal and many other problems arising as a result of the accident at the Chernobyl nuclear power plant.

30. It has become increasingly clear over time that the global effects of the Chernobyl disaster require effective international cooperation if they are to be solved. The people of Ukraine welcomed with great appreciation the assistance provided over the past few years by the international community.

31. The further development of international cooperation, the combined efforts of scientists and specialists from various countries, the use of the experience that has been accumulated and the achievements of modern world scientific and engineering thinking could make a significant contribution to the solution of the unprecedentedly complex problems of protecting people and the natural environment from the destructive effects of the Chernobyl accident.